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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,832	12/27/2000	Ligang Lu	YOR920000783US1	6286

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EXAMINER
VO, TUNG T

ART UNIT	PAPER NUMBER
2613	7

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
Office Action Summary		09/748,832	LU ET AL.
		Examiner	Art Unit
		Tung T. Vo	2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 June 2003</u> .

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-25</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

It is noted that the applicant has added new claims 9-25; therefore, a new ground

rejection for claims 9-25 follows.

2.   Claims 9-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Keesman et al.

(US 5,805,224).

Re claim 9, Keesman discloses a method for video transcoding, comprising:

decoding (212 of figs. 2 or 5), at least partially, a compressed video signal to produce an

at least partially reconstructed video signal, said compressed video signal being a data

stream coded by a first coding scheme (col. 6, lines 54-63);

determining a current picture complexity for a portion of a current picture in said

at least partially reconstructed video signal (col. 7, lines 23-31, see also fig. 3); selecting

a second coding scheme based on said current picture complexity(col. 7, lines 23-31);

encoding (202 of fig. 2 or 5) said current picture using said second coding scheme and said current picture complexity (col. 8, lines 25-46.

Re claim 10, Keesman further discloses the step determining current signal characteristics for said current picture (col. 7, lines 23-27; col. 8, lines 25-47); and using said current signal characteristics in selecting said second coding scheme (col. 7, lines 26-28; col. 8, lines 25-47)

Re claims 11, Keesman further discloses the step of using said current signal characteristics in encoding said current picture (col. 8, lines 25-24, where I picture is encoded).

Re claim12. Keesman further discloses the step of determining a future picture complexity for a portion of a future picture in said at least partially reconstructed video signal (cols 7, lines 14-col.8, line 67); and using said future picture complexity in selecting said second coding scheme (I, P or B, is encoded by the encoder (202 of fig. 5).

Re claim 13, Keesman further discloses the step of using said future picture complexity in encoding said current picture (col. 8, lines 25-47, where I, P, or B picture is encoded).

Re claim 14, Keesman further discloses the step of determining future signal characteristics for said future picture; and using said future signal characteristics in selecting said second coding scheme (col. 8).

Re claim 15, Keesman further discloses the step of using said future signal characteristics in encoding said current picture (see col. 8).

Re claim 16, Keesman further discloses wherein said portion is a slice (I, P, B pictures, cols.5-6).

Re claim 17, Keesman further discloses wherein said portion is a macroblock (col. 5-col.6).

Re claim 18, Keesman further discloses the step of determining a macroblock complexity for said macroblock; and using said macroblock complexity in selecting said second coding scheme (cols.7-8).

Re claim 19. Keesman further discloses the step of using said macroblock complexity in encoding said current picture (col. 8).

Re claims 20-25, Keesman further discloses the step of wherein said future picture complexity is determined by a function of total bits and an average quantization step size used to code said data stream (92, 196 of fig. 6; see also col. 7, lines 20-31).

3.   Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Youn et al. (US 6,466,623) as set forth in the previous Office Action, Paper No. 5.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Youn et

al. (US 6,466,623) as applied to claim 1 and 3, and further in view of Kwok et al. (US

5,889,561) as set forth in the previous Office Action, Paper No. 5.

Response to Arguments

6.   Applicant's arguments filed 06/09/03 have been fully considered but they are not

persuasive.

With regard claim 1, the applicant argued that Youn discloses "motion estimator" and

"signal characteristics" that are not the same in the claimed invention, pages 6 and 7 of the

remarks.

The examiner respectfully disagrees with the applicant. It is submitted that the examiner

interprets that Youn discloses the system for transcoding compressed video signal, including a

plurality of pictures, which images comprise text, object, information, and data that are

complexity (fig. 8), wherein the system comprises: an estimator, in the encoding environment the

estimator must estimate motion vectors and server the same purposes for any type of encoders,

particularly to gather information and estimate the signal characteristics, the data, text, and video

object are complexity of the video signal (706 and 708 of fig. 8; e.g. MOTION ESTIMATOR

estimates the motion vectors using the video signal and then provides the motion vector (708) to

a decoder (814 of fig. 8) and a further encoder (816 of fig. 8); see col. col. 7, line 61 through col.

8, line 31); a decoder to completely or partially decode the compressed video signal (814 of fig.

8; e.g. the decoder (814) decodes the encoded video signal (712 of fig. 8); see also col. 7, lines

42-47); an encoder to compress the reconstructed video signal according to a coding scheme

devised on the estimated signal characteristics from the estimator (816 of fig. 8; e.g. the encoder

(816) re-encodes the decoded video signal with a bit and frame rate suitable for the network, the

characteristics (522 of fig. 8) using the incoming motion vector signal (708 of fig. 8); see also

col. 7, lines 48-50 and col. 8, lines 26-30). Youn shows that the complexity calculation in the

image pictures, so the pictures muss comprises the complexity. Signal characteristics are

interpreted as the incoming motion vectors and out coming motion vectors, the macroblocks in

the pictures that are in the sequence (signal images) as described in the figures 10 of Youn.

Therefore, Youn anticipates the claimed features.

With regard claim 2, the applicant argued that Youn does not teach "a look ahead

estimator", page 7 of the remarks. The examiner respectfully disagrees with the applicant. The

examiner interprets that Youn does disclose the estimator is considered as a look-ahead estimator

(1202, 1204 and 1206 of fig. 12; these elements (1202, 1204 and 1206) implemented to estimate

a motion vector (928 of fig. 12) of the current and previous frames to predict the incoming frame

(incoming future frame)), where the look-ahead estimator gathers information from the incoming

compressed video signal and the decoder to estimate the signal characteristics of both the future

incoming pictures and current picture (914, 920, and 636 of fig. 12; e.g. the look-ahead motion

estimator gathers the input motion vector that is considered as the information of the incoming

compressed signal (625) and the information of the decoder (920) to estimate the signal

characteristics of the future incoming pictures (Frame n, Frame n+1) and current picture (Frame

n-1) (IVn, IVn+1 of fig. 10); see also col. 8, lines 45-47; col. 10, lines 54). Since the estimator

of Youn does the same function as claimed, so Youn anticipated the claimed features.

With regard claims 3 and 4, the applicant further argued that "picture complexity" is different from the operation/structure/algorithm complexity of Youn, pages 7-8 of the remarks. The examiner respectfully disagrees with the applicant. It is interpreted that Youn discloses the estimator derives the signal complexity of the current picture being transcoded (col. 2, lines 23-25; col. 11, lines 23-24; e.g. the complexity of computation of quantization step size used in the current picture is similar to checking one position in motion estimation), wherein the complexity calculation is based on the image, so the picture must be a picture complexity. Therefore, Youn anticipated the claimed features.

Re claim 5 and 6, the applicant further argued that Youn does not teach every element as claimed. The examiner respectfully disagrees with the applicant that Youn does disclose all limitation as shown in the previous office action and the discussion above. Youn further discloses portion is a slice of the picture (e.g. MPEG, H.261, and H.263; wherein the MPEG contains a slice of the picture, see col. 4, line 63 through col. 5, line 20). In view of the discussion above, the Youn anticipated the claimed features.

It is noted that Youn does not described a system identical to that disclosed by the applicant. However, claims are to be given their broadest reasonable interpretation during the examination, and reading disclosed limitations into claim couldn't narrow the scope of a claim. See In Re Morris, 127 F. 3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404,

162 USPQ 541, 550 (CCPA 1969). In addition, the law of anticipation does not require that a

reference "teach" what applicant's disclosure teaches. Assuming that a reference is properly

"prior art," it is only necessary that the claims "read on" something disclosed in reference, i.e.,

all limitations of the claim are found in reference, or "fully met" by it. Kalman v. Kimberly-

Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983).

With regard claims 7 and 8, the applicant further argued that Kwok have not mention of

any picture complexity or picture complexity estimation, pages 9 and 10 of the remarks. The

examiner respectfully disagrees with the applicant. The examiner use Youn for the estimation

function of the pictures. Since Youn teaches the picture complexity that is interpreted above and

follow wherein Youn further suggests the transcoding system (figs. 8, 9 and 19) for transcoding

the encoded or compressed video signal using the picture type, motion vectors quantization step

size, bit-allocation statistics, which are considered picture complexity (col. 2, lines 20-23), but

Youn does not particularly disclose said complexity is estimated by a function of the total bits

and the average quantization step size used to code the picture in the first coding scheme as

claimed. The examiner use Kwok for the estimation function of the transcoding, wherein Kowk

teaches the complexity is estimated by a function of the total bits and the average quantization

step size used to encode the picture in the first coding scheme (42 and 47 of fig. 4; e.g. the total

bits and quantization factor (step size) are estimated by the function of SF that used in the

encoder (43 of fig. 4); see also col. 6, lines 8-25). Therefore, one skilled in the art would

incorporate the function (col. 6, lines 8-25) of Kwok into the transcoding system of Youn for the

same purpose of performing the function of the total bits and the average quantization step size

used to encode the picture in the encoder as suggested by Kwok (col. 5, lines 25-34). In view of the discussion above, the combination of Youn and Kwok makes obvious the claimed invention.

It is further noted that the obviousness may be made from common knowledge and common sense of a person of ordinary skill in the art without any specific hint or suggestion in a particular reference. In re Bozek, 416 F.2d 1385, 163 USPQ 545 (CCAP 1969).

Conclusion

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung T. Vo whose telephone number is (703) 308-5874. The examiner can normally be reached on 6:30 AM - 3:00 PM.
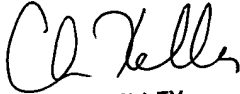
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris. Kelley can be reached on (703) 305-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Tung T. Vo
Examiner
Art Unit 2613

T.Vo
November 4, 2003

CHRIS KELLEY
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